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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/682,536

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Scott A. Cummings

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EXAMINER

CHAN, SAI MING

ART UNIT

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2462

MAIL DATE

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/682,536	Applicant(s) CUMMINGS, SCOTT A.	
	Examiner SAI-MING CHAN	Art Unit 2462	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 01 September 2010.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,2,6-13,17-26 and 30-45 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,2,6-13,17-26 and 30-45 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 1-2, 6-7, 9, 11-12, 37, 40 & 43 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Lind et al. (U.S. Patent Publication # 20040244043)**, in view of **Liva et al. (U.S. Patent Publication #20020136203)**.

Consider **claim 1**, Lind et al. clearly disclose and show a method for improving channel efficiency in a broadband communication system that complies with a Data

Over Cable Service Interface Specification (DOCSIS) standard, comprising:

establishing one or more proprietary logical channels for communication between a first device that supports at least one proprietary communication parameter (fig. 2 (28 CMTS), fig. 11a (192 & 194)) and other devices that support said at least one proprietary communication parameter (fig. 2 (42 CM), fig. 11a (192 & 194));

receiving registration information from a second device (para. 101), wherein said registration information indicates that said second device supports said at least one proprietary communication parameter (fig. 5a (102));

determining whether said second device may be assigned to one of said one or more proprietary logical channels based on said registration information (fig. 5a (104), paragraphs 119 & 120),

assigning said second device to said one of said one or more proprietary logical channels when said second device may be assigned to said one of said one or more proprietary logical channels (fig. 5a (102 and 104));

determining whether a predetermined number of currently registered devices (para. 0004 (capacity), EN: when the channel capacity is full, there will be corresponding number of devices registered. The predetermined number is simply the number currently registered) support said at least one proprietary communication parameter (para. 101 (what types of downstream channels in terms of the channel parameters the extra CM tuners can receive), para. 120 (the downstream parameters such as frequency, modulation type, interleaver depth, symbol rate, etc.) when said

second device cannot be assigned to said one of said one or more proprietary logical channels (para. 0004 (capacity), EN: when the capacity is full).

However, Lind et al. do not specially disclose creating a new proprietary logical channel.

In the same field of endeavor, Liva et al. clearly show creating a new proprietary logical channel (para. 0012 (recabling to a new logical channel when capacity is reached)).

Therefore it would have been obvious to a person of ordinary skill in the art at the time the invention was made to demonstrate a channel efficiency method, as taught by Lind, and create logical channels, as taught by Liva, so that communication can be conducted efficiently.

Consider **claim 25**, is rejected for the same reason as set forth in claim 1 except a computer program product (Lind: para. 0074) comprising a computer usable medium having computer program logic (Lind: Para. 0074) recorded thereon for enabling a processor (Lind: para. 0074) to facilitate communication between devices in a broadband communication system (Lind: para. 0075) that complies with a Data Over Cable Service Interface Specification (DOCSIS) standard (Lind: 0075 (DOCSIS)).

Consider **claim 2**, and **as applied to claim 1 above**,
claim 26, and **as applied to claim 25 above**,

Lind et al. clearly disclose and show a method, wherein said first device comprises a cable modem termination system (fig. 2 (28 CMTS)) and said second device comprises a cable modem (fig. 2 (42 CM)).

Consider **claim 6**, and **as applied to claim 1 above**,
claim 30, and **as applied to claim 25 above**,
they are being rejected for the same reason as set forth in claim 1 except the UCD messages (Lind: para. 0029 (UCD messages)).

Consider **claim 7**, and **as applied to claim 6 above**,
claim 31, and **as applied to claim 30 above**,
Lind et al. clearly disclose and show a method, wherein said generating of said UCD message comprises generating a message having a version field or a type field (para. 0046) that comprises a value not provided for by the DOCSIS standard (para. 0002).

Consider **claim 9**, and **as applied to claim 8 above**,
claim 33, and **as applied to claim 32 above**,
Lind et al. clearly disclose and show a method, wherein said sending said UCD message only to said devices that support said at least one proprietary communication parameter comprises:

accessing a database of identifiers of devices (Fig. 10 (182)) that support said at least one proprietary communication parameter (fig. 10 (182 (parameters of each link)));

generating a unicast UCD message addressed to each of said devices having an identifier in said database (paragraphs 25-29 (generate and transmit UCD message for each upstream)).

Consider **claim 11**, and **as applied to claim 1 above**,

claim 35, and **as applied to claim 25 above**,

Lind et al. clearly disclose and show a method, wherein said receiving said registration information from said second device comprises:

 sending a first message to said second device to determine if said second device implements any proprietary features (fig. 11a (192));

 receiving a message from said second device, wherein said message indicates support by said second device for said at least one proprietary communication parameter (fig. 11a (194)); and

 sending a second message to said second device, wherein said second unicast message indicates support by said first device for said at least one proprietary communication parameter (paragraphs 25-29 (generate UCD message)).

Consider **claim 12**, and **as applied to claim 1 above**,

claim 36, and **as applied to claim 25 above**,

they are being rejected for the same reason as set forth in claim 10.

Consider **claim 37**, and **as applied to claim 1 above**,

claim 39, and **as applied to claim 25 above**,

Lind et al. clearly disclose and show a method, wherein said at least one proprietary communication parameter includes at least one of a group consisting of a modulation rate, base rate, and an alpha value (fig. 5a (102,104), para. 0046).

Consider **claim 40**, and **as applied to claim 1 above**,

claim 42, and **as applied to claim 25 above**,

Lind et al. clearly disclose and show a method, wherein said at least one proprietary communication parameter is not provided for by said DOCSIS standard (para. 0002).

Consider **claim 43**, and **as applied to claim 1 above**,

claim 45, and **as applied to claim 25 above**,

Lind et al. clearly disclose and show a method, further comprising:
assigning said second device to a standard DOCSIS channel when said predetermined number of currently registered devices does not support said at least one proprietary communication parameter (para. 0002 (point to multi-point linking), para. 0019 (work as single DOCSIS channel CMs)).

Claims 8, 10, 32 & 34 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Lind et al. (U.S. Patent Publication # 20040244043)**, in view of **Liva et al. (U.S. Patent Publication #20020136203)**, and in view of **Rakib et al. (U.S. Patent Publication # 20050025145)**.

Consider **claim 8**, and **as applied to claim 1 above**,
claim 32, and **as applied to claim 30 above**,
Lind et al. clearly disclose and show the method as described.

However, Lind et al. do not specially disclose sending the UCD messages to the intended devices.

In the same field of endeavor, Rakib et al. clearly show sending the Upstream Channel Descriptor (UCD) message (paragraph 63) only to intended devices (figs. 9a,b & c; paragraph 36).

Therefore it would have been obvious to a person of ordinary skill in the art at the time the invention was made to incorporate a channel efficiency method, as taught by Lind, and to send a UCD message to intended devices, as taught by Rakibet, in order to show that the bandwidth efficiency is optimized.

Consider **claim 10**, and **as applied to claim 8 above**,
claim 34, and **as applied to claim 32 above**,

Lind et al. clearly disclose and show a method, wherein said sending said message only to said devices that support said at least one proprietary communication parameter comprises:

accessing an identifier that identifies a plurality of devices that support said at least one proprietary communication parameter (para. 0046 (CMTS sends out parameters of upstream); para. 0047 (CMTS receives messages from CM and store some of the data)); and.

However, Lind et al. do not specially disclose sending the multicast UCD message.

In the same field of endeavor, Rakib et al. clearly show sending the Upstream Channel Descriptor (UCD) message (paragraph 62 (UCD)) a plurality of devices (figs. 9a,b &c; paragraph 36).

Therefore it would have been obvious to a person of ordinary skill in the art at the time the invention was made to incorporate a channel efficiency method, as taught by Lind et al., and to send a multicast UCD message, as taught by Rakib et al., in order to show that the bandwidth efficiency is optimized.

Claims 13, 17-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Lind et al. (U.S. Patent Publication # 20040244043)**, in view of **Liva et al. (U.S. Patent Publication #20020136203)**.

Consider **claim 13**, it is being rejected for the same reason as set forth in claim 1, except:

a registration module (Lind: para. 0021 (receiving registration messages))

However, Lind et al. do not specially disclose channel manager and creating a new proprietary logical channel.

In the same field of endeavor, Liva et al. clearly show channel manager (para. 0023 (dynamic channel assignment)) and creating a new proprietary logical channel (paragraph 0066 (other channel supports legacy channel)) which supports said at least one proprietary communication parameter (paragraph 0096 (each channel is provisioned appropriately for each parameter)).

Therefore it would have been obvious to a person of ordinary skill in the art at the time the invention was made to demonstrate a channel efficiency method, as taught by Lind et al., and show channel manager and creating logical channels, as taught by Liva, so that communication can be conducted efficiently.

Consider **claim 17**, and **as applied to claim 13 above**, Lind et al. clearly disclose a CMTS, wherein said upstream channel manager (para. 0047 (use in controlling upstream bursts)) is further configured to determine whether or not to establish said one or more proprietary logical channels (para. 0004 (max. capacity), EN: when max. capacity is reached, a new channel may be needed).

Consider **claim 18**, and **as applied to claim 13 above**, Lind et al. clearly disclose a CMTS, wherein said upstream channel manager is further configured to generate a

UCD message (para. 0148 (send channel message to CM)) that includes said at least one proprietary communication parameter (para. 0148 (channel parameters)).

Consider **claim 19**, and **as applied to claim 18 above**, Lind et al. clearly disclose a CMTS, wherein said generating of said UCD message comprises generating a message having a version field or a type field (para. 0046) that comprises a value not provided for by the DOCSIS standard (para. 0002).

Claims 20-24, 38, 41 and 44 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Lind et al. (U.S. Patent Publication # 20040244043)**, in view of **Liva et al. (U.S. Patent Publication #20020136203)**, and further in view of **Rakib et al. (U.S. Patent Publication #20040181811)**.

Consider **claim 20**, and **as applied to claim 18 above**, Lind et al. clearly disclose and show the method as described.

However, Lind et al. do not specially disclose sending the UCD messages to the intended devices.

In the same field of endeavor, Rakib et al. clearly show sending the Upstream Channel Descriptor (UCD) message (paragraph 63) only to cable modems that support said at least one proprietary communication parameter (figs. 9a,b & c; paragraph 36).

Therefore it would have been obvious to a person of ordinary skill in the art at the time the invention was made to incorporate a channel efficiency method, as taught by

Lind, and to send a UCD message to intended devices, as taught by Rakibet, in order to show that the bandwidth efficiency is optimized.

Consider **claim 21**, and **as applied to claim 20 above**, Lind et al. clearly disclose and show a method, wherein said sending said UCD message only to said devices that support said at least one proprietary communication parameter comprises:

accessing a database of identifiers of devices (Fig. 10 (182)) that support said at least one proprietary communication parameter (fig. 10 (182 (parameters of each link)));

generating a unicast UCD message addressed to each of said devices having an identifier in said database (paragraphs 25-29 (generate UCD message)).

Consider **claim 22**, and **as applied to claim 20 above**, Lind et al. clearly disclose a method, wherein said sending said message only to said devices that support said at least one proprietary communication parameter comprises:

accessing an identifier that identifies a plurality of devices that support said at least one proprietary communication parameter (para. 0046 (CMTS sends out parameters of upstream); para. 0047 (CMTS receives messages from CM and store some of the data)); and.

However, Lind et al. do not specially disclose sending the multicast UCD message.

In the same field of endeavor, Rakib et al. clearly show sending the Upstream Channel Descriptor (UCD) message (paragraph 63) a plurality of devices (figs. 9a,b &c; paragraph 36).

Therefore it would have been obvious to a person of ordinary skill in the art at the time the invention was made to incorporate a channel efficiency method, as taught by Lind et al., and to send a multicast UCD message, as taught by Rakib et al., in order to show that the bandwidth efficiency is optimized.

Consider **claim 23**, and **as applied to claim 13 above**, Lind et al. clearly disclose a CMTS, wherein said registration module is further configured to send a first unicast message to said cable modem to determine if said cable modem implements any proprietary features (para. 0046 (CMTS sends out parameters of upstream), to receive a message from said cable modem, wherein said message indicates that said cable modem supports said at least one proprietary communication parameter (para. 0047 (CMTS receives messages from CM and store some of the data)), and to send a second unicast message to said cable modem, wherein said second unicast message indicates that said CMTS supports said at least one proprietary communication parameter (fig. 2 (28 CMTS), fig. 11a (192 & 194)).

Consider **claim 24**, and **as applied to claim 13 above**, Lind et al. clearly disclose a CMTS, wherein said registration module is further configured to generate a unicast message to said cable modem identifying said logical channel (paragraphs 25-29 (generate UCD message)).

Consider **claim 38**, and **as applied to claim 13 above**, Lind et al. clearly disclose and show a CMTS, wherein said at least one proprietary communication parameter includes at least one of a group consisting of a modulation rate, base rate, and an alpha value (fig. 5a (102,104), para. 0046).

Consider **claim 41**, and **as applied to claim 13 above**, Lind et al. clearly disclose and show a CMTS, wherein said at least one proprietary communication parameter is not provided for by said DOCSIS standard (para. 0002).

Consider **claim 44**, and **as applied to claim 13 above**, Lind et al. clearly disclose and show a method, further configured to assign said second device to a standard DOCSIS channel when said predetermined number of currently registered devices does not support said at least one proprietary communication parameter (para. 0002 (point to multi-point linking), para. 0019 (work as single DOCSIS channel CMs)).

Response to Arguments

Applicant's arguments filed on 9/1/2010, with respect to claims 1 and 25, on pages 13-19 of the remarks, have been carefully considered.

In the present application, Applicants basically argue, that Lind does not teach or suggest “a predetermined number of currently registered devices support said at least one proprietary communication parameter”. This is a broad limitation because “a predetermined number” could be interpreted as the current number of devices waiting for the channel when the channel is full. See the above rejections of claims 1 and 25, for the relevant interpretation and citations found in Lind et al., disclosing the new limitations.

Conclusion

Any response to this Office Action should be **faxed to (571) 273-8300 or mailed to:**

Commissioner for Patents
P.O. Box 1450
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Hand-delivered responses should be brought to

Customer Service Window

Randolph Building
401 Dulany Street
Alexandria, VA 22314

Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Sai-Ming Chan whose telephone number is (571) 270-1769. The Examiner can normally be reached on Monday-Thursday from 8:30am to 5:00pm.

If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's supervisor, Seema Rao can be reached on (571) 272-3174. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free) or 571-272-4100.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist/customer service whose telephone number is (571) 272-2600.

/Sai-Ming Chan/

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Art Unit: 2462

Examiner, Art Unit 2462

September 9, 2010

/Seema S. Rao/

Supervisory Patent Examiner, Art Unit 2462